machine translation of 2001-216449

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Notes:

1. Untranslatable words are replaced with asterisks (****).
2. Texts in the figures are not translated and shown as it is.

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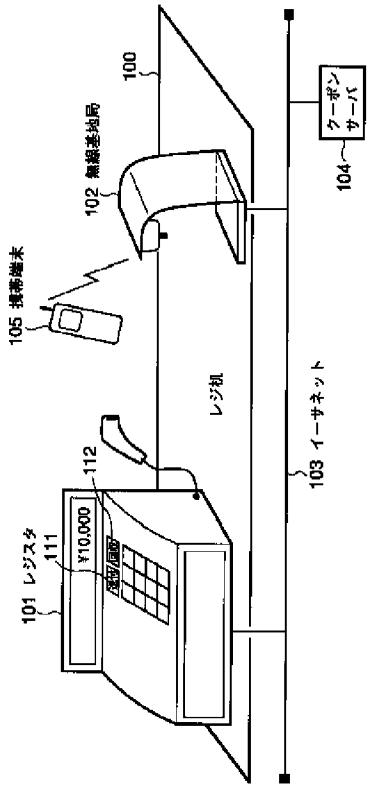

[Translation done.]

TECHNICAL FIELD

[Field of the Invention] This invention relates to the base transceiver station which constitutes the electronic coupon sending system and the electronic coupon recovery system, and this which are arranged at a store etc., radio personal digital assistants, those electronic coupon address methods, and the electronic coupon recovery method.

[Translation done.]

CLAIM + DETAILED DESCRIPTION

[Claim(s)]
[Claim 1] It is the electronic coupon address method for sending an electronic coupon to a radio personal digital assistant from the base transceiver station of wireless LAN. The notice of the terminal identifier of this radio personal digital assistant is required of said radio personal digital assistant from said base transceiver station through said wireless LAN. Said base transceiver station is notified of the terminal identifier of this radio personal digital assistant from said radio personal digital assistant through said wireless LAN. A radio personal digital assistant with said notified terminal identifier requires investigation of being the candidate for sending of an electronic coupon of server equipment from said base transceiver station. When it is what shows that the radio personal digital assistant in which the result of this investigation has said terminal identifier is the candidate for sending of an electronic coupon The electronic coupon address method characterized by notifying said base transceiver station of the result of said investigation from said server equipment, and transmitting an electronic coupon to said radio personal digital assistant from said base transceiver station through said wireless LAN.
[Claim 2] It is the electronic coupon recovery method of collecting electronic coupons from a radio personal digital assistant to the base transceiver station of wireless LAN. The notice of the terminal identifier of this radio personal digital assistant is required of said radio personal digital assistant from said base transceiver station through said wireless LAN. Said base transceiver station is notified of the terminal identifier of this radio personal digital assistant from said radio personal digital assistant through said wireless LAN. A radio personal digital assistant with said notified terminal identifier requires investigation of being the candidate for recovery of an electronic coupon of server equipment from said base transceiver station. When it is what shows that the radio personal digital assistant in which the result of this investigation has said terminal identifier is the candidate for recovery of an electronic coupon The electronic coupon recovery method characterized by performing processing for collecting the electronic coupons which notify said base transceiver station of the result of said investigation from said server equipment, and have justification between said base transceiver station and said radio personal digital assistant through said wireless LAN.
[Claim 3] It has the base transceiver station of server equipment and at least one wireless LAN which manages information. Are the electronic coupon sending system which sends an electronic coupon to a radio personal digital assistant using wireless LAN, and [said base transceiver station] A means to transmit the 1st demand message which requires the

notice of a terminal identifier of a radio personal digital assistant through said wireless LAN, A means to receive the 1st response massage which contains a terminal identifier from a radio personal digital assistant through said wireless LAN, A means by which a radio personal digital assistant with said terminal identifier contained in said 1st response massage which received transmits the 2nd demand message which requires investigation of being the candidate for sending of an electronic coupon to said server equipment, A means to receive the 2nd response massage which contains the results of an investigation to said 2nd demand message from said server equipment, When the results of an investigation which show that the radio personal digital assistant which has said terminal identifier in said 2nd response massage which received is the candidate for sending of an electronic coupon are contained A means by which it has a means to transmit an electronic coupon to this radio personal digital assistant through said wireless LAN, and said server equipment receives said 2nd demand message from said base transceiver station, The information about the terminal identifier of the radio personal digital assistant made applicable [of an electronic coupon] to sending is referred to. The electronic coupon sending system characterized by having a means to investigate whether a radio personal digital assistant with said terminal identifier contained in said 2nd demand message which received is the candidate for sending of an electronic coupon, and a means to transmit the 2nd response massage containing these results of an investigation to said base transceiver station.

[Claim 4] A means by which said radio personal digital assistant receives said 1st demand message from said base transceiver station through said wireless LAN, A means to transmit the 1st response massage which contains the terminal identifier of a self-terminal to said base transceiver station through said wireless LAN when said 1st demand message is received, The electronic coupon sending system according to claim 3 characterized by having a means to receive an electronic coupon from said base transceiver station through said wireless LAN, and a means to accumulate said received electronic coupon.

[Claim 5] [said base transceiver station] when a radio personal digital assistant with said terminal identifier contained in said 1st response massage which received is the candidate for sending of an electronic coupon A means to transmit the 3rd demand message which requires transmission of the coupon identifier which shows the electronic coupon which should transmit to a radio personal digital assistant with this terminal identifier to said server equipment, From said server equipment, have further a means to receive the 3rd response massage containing said coupon identifier, and [said server equipment] A means to receive said 3rd demand message from said base transceiver station, A means to determine the coupon identifier which shows the electronic coupon which should transmit to a radio personal digital assistant with this terminal identifier based on said terminal identifier contained in said 3rd demand message which received, Have further a means to transmit the 3rd response massage containing said determined coupon identifier to said base transceiver station, and [said base transceiver station] The electronic coupon sending system according to claim 3 characterized by transmitting an electronic coupon based on said coupon identifier contained in said 3rd response massage which received.

[Claim 6] A means to transmit the 4th demand message as which said base transceiver station demands the notice of a display contents description method of said radio personal digital assistant through said wireless LAN, It has further a means to receive the 4th

response massage including the information which shows a display contents description method from said radio personal digital assistant through said wireless LAN. The electronic coupon sending system according to claim 3 characterized by transmitting the electronic coupon containing the display contents described by said display contents description method contained in said 4th response massage.
[Claim 7] [said base transceiver station] when a radio personal digital assistant with said terminal identifier contained in said 1st response massage which received is the candidate for sending of an electronic coupon A means to transmit the 5th demand message which requires transmission of the data of an electronic coupon which should be transmitted to a radio personal digital assistant with this terminal identifier to said server equipment, From said server equipment, have further a means to receive the data of said electronic coupon, and [said server equipment] A means to receive said 5th demand message from said base transceiver station, A means to determine the coupon identifier which shows the electronic coupon which should transmit to a radio personal digital assistant with this terminal identifier based on said terminal identifier contained in said 5th demand message which received, The electronic coupon sending system according to claim 3 characterized by having further a means to transmit the data of the electronic coupon shown by said determined coupon identifier to said base transceiver station.
[Claim 8] A means to transmit the 4th demand message as which said base transceiver station demands the notice of a display contents description method of said radio personal digital assistant through said wireless LAN, It has further a means to receive the 4th response massage including the information which shows a display contents description method from said radio personal digital assistant through said wireless LAN. The information which shows said display contents description method contained in said terminal identifier contained in said 1st response massage and said 4th response massage is included. A means to transmit the 6th demand message which requires transmission of the data of an electronic coupon which should be transmitted to a radio personal digital assistant with this terminal identifier to said server equipment, From said server equipment, have further a means to receive the data of said electronic coupon, and [said server equipment] A means to determine the coupon identifier which shows the electronic coupon which should transmit to a radio personal digital assistant with this terminal identifier based on said terminal identifier contained in a means to receive said 6th demand message from said base transceiver station, and said 6th demand message which received, The electronic coupon sending system according to claim 3 characterized by having further a means to transmit the data of the electronic coupon containing the display contents which are the electronic coupons shown by said determined coupon identifier, and were described by said display contents description method to said base transceiver station.
[Claim 9] A means by which said radio personal digital assistant receives said 4th demand message from said base transceiver station through said wireless LAN, A means to transmit the 4th response massage which includes the information which shows the display contents description method of a self-terminal to said base transceiver station through said wireless LAN when said 4th demand message is received, The electronic coupon sending system according to claim 6 or 8 characterized by having a means to display the display contents described by said display contents description method contained in the received electronic coupon on a display screen.

[Claim 10] Said electronic coupon is an electronic coupon sending system according to claim 3 characterized by including the coupon identifier for identifying this electronic coupon uniquely, and the display contents about this electronic coupon at least.
[Claim 11] Said electronic coupon is an electronic coupon sending system according to claim 10 characterized by including the control information about the expiration date of this electronic coupon.
[Claim 12] [said electronic coupon / the portion which contains at least what should be protected from an alteration among the data of this electronic coupon] The electronic coupon sending system according to claim 10 or 11 characterized by including the electronic signature enciphered and obtained using the key currently held without being known from the outside in said base transceiver station and/or said server equipment.
[Claim 13] [said electronic coupon / the terminal identifier of the radio personal digital assistant which should transmit the portion and this electronic coupon which contain at least what should be protected from an alteration among the data of this electronic coupon] The electronic coupon sending system according to claim 10 or 11 characterized by including the electronic signature enciphered and obtained using the key currently held without being known from the outside in said base transceiver station and/or said server equipment.
[Claim 14] It has the base transceiver station of server equipment and at least one wireless LAN which manages information. Are the electronic coupon recovery system which collects electronic coupons from a radio personal digital assistant using wireless LAN, and [said base transceiver station] A means to transmit the 1st demand message which requires the notice of a terminal identifier of a radio personal digital assistant through said wireless LAN, A means to receive the 1st response massage which contains a terminal identifier from a radio personal digital assistant through said wireless LAN, A means by which a radio personal digital assistant with said terminal identifier contained in said 1st response massage which received transmits the 2nd demand message which requires investigation of being the candidate for recovery of an electronic coupon to said server equipment, A means to receive the 2nd response massage which contains the results of an investigation to said 2nd demand message from said server equipment, When the results of an investigation which show that the radio personal digital assistant which has said terminal identifier in said 2nd response massage which received is the candidate for recovery of an electronic coupon are contained A means to transmit the 3rd demand message which requires the presentation of an electronic coupon used as this radio personal digital assistant for recovery through said wireless LAN, A means to receive the 3rd response massage containing data required for verification of the justification of information and this electronic coupon which can specify the electronic coupon made applicable to recovery at least from a radio personal digital assistant through said wireless LAN, Data required for verification of the justification of information and this electronic coupon which can specify said electronic coupon contained in said 3rd response massage which received at least is included. A means to transmit the 4th demand message which requires the check of the justification of this electronic coupon to said server equipment, A means to receive the 4th response massage which includes the check result of said 4th demand message from said server equipment, When the check result which shows the purport that said electronic coupon is just is included in said 4th response massage which received Have a means to transmit the 5th

demand message which directs elimination of the data of said electronic coupon used as this radio personal digital assistant for recovery through said wireless LAN, and [said server equipment] A means to receive said 4th demand message from said base transceiver station, and a means to check the justification of said electronic coupon based on the data contained in said 2nd demand message which received, The electronic coupon recovery system characterized by having a means to transmit the 4th response massage including this check result to said base transceiver station.

[Claim 15] Said server equipment is an electronic coupon recovery system according to claim 14 characterized by equipping register equipment with a means to direct the service processing corresponding to this electronic coupon, further when said electronic coupon is just as a result of said check.

[Claim 16] [the portion which contains in the said 3rd and 4th demand messages at least what should be protected from an alteration among the data of an electronic coupon] Said server equipment including the data for verifying electronic signature and this electronic signature enciphered and obtained using the same key as the key currently held without being known from the outside in said server equipment [with verification of said electronic signature] The electronic coupon recovery system according to claim 14 characterized by checking the justification of said electronic coupon.

[Claim 17] [the terminal identifier of the radio personal digital assistant which should transmit the portion and this electronic coupon which contain in the said 3rd and 4th demand messages at least what should be protected from an alteration among the data of an electronic coupon] Said server equipment including the data for verifying the electronic signature and this electronic signature which were enciphered and obtained using the same key as the key currently held without being known from the outside in said server equipment [with verification of said electronic signature] The electronic coupon recovery system according to claim 14 characterized by checking the justification of said electronic coupon.

[Claim 18] Said electronic coupon made applicable to recovery is an electronic coupon currently displayed on the display screen of said radio personal digital assistant, and [said radio personal digital assistant] The electronic coupon recovery system according to claim 14 characterized by eliminating the data of the electronic coupon currently displayed on said display screen from a memory means when said 5th demand message is received.

[Claim 19] A means to transmit the demand message which is a base transceiver station for sending an electronic coupon to a radio personal digital assistant using wireless LAN, and requires the notice of a terminal identifier of a radio personal digital assistant through said wireless LAN, A means to receive the response massage which contains a terminal identifier from a radio personal digital assistant through said wireless LAN, The means for investigating whether a radio personal digital assistant with said terminal identifier contained in said response massage which received is the candidate for sending of an electronic coupon, The base transceiver station characterized by having a means to transmit an electronic coupon to this radio personal digital assistant through said wireless LAN when a radio personal digital assistant with said terminal identifier is the candidate for sending of an electronic coupon as a result of this investigation.

[Claim 20] A means to transmit the demand message which is a base transceiver station for collecting electronic coupons from a radio personal digital assistant using wireless

LAN, and requires the notice of a terminal identifier of a radio personal digital assistant through said wireless LAN, A means to receive the response massage which contains a terminal identifier from a radio personal digital assistant through said wireless LAN, The means for investigating whether a radio personal digital assistant with said terminal identifier contained in said response massage which received is the candidate for recovery of an electronic coupon, A means to transmit the demand message which requires the presentation of an electronic coupon used as this radio personal digital assistant for recovery through said wireless LAN when a radio personal digital assistant with said terminal identifier is the candidate for recovery of an electronic coupon as a result of this investigation, The base transceiver station characterized by having a means to receive the response massage including the information that the electronic coupon made applicable to recovery at least from a radio personal digital assistant through said wireless LAN can be specified.

[Claim 21] The base transceiver station according to claim 19 or 20 characterized by having the radio shield part which shields the radio signal from one way at least.

[Claim 22] By the means of communication for communicating with the base station of the wireless LAN arranged in a store, and said means of communication, through said wireless LAN among said base transceiver stations A means to perform processing for receiving sending of an electronic coupon published by said store, A means to accumulate said electronic coupon received from said base transceiver station through said wireless LAN by said means of communication, The display contents contained in said electronic coupon accumulated into the self-terminal through said wireless LAN by means to display on the display screen which accompanies a self-terminal, and said means of communication among said base transceiver stations The radio personal digital assistant characterized by having a means to perform processing for using said usable electronic coupon accumulated into the self-terminal at said store, and a means to perform processing for eliminating said used electronic coupon from the inside of a self-terminal.

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the base transceiver station which constitutes the electronic coupon sending system and the electronic coupon recovery system, and this which are arranged at a store etc., radio personal digital assistants, those electronic coupon address methods, and the electronic coupon recovery method.

[0002]

[Description of the Prior Art] Communication between the personal computers using a cellular phone or wireless LAN has spread quickly with progress of radio technology in recent years. The present main applications are the applications of the office network currently performed with what is called a telephone, Internet access or usual Ethernet (registered trademark) LAN, etc.

[0003] On the other hand, the latest cellular phone and the spread of PDA(s) realized the cellular phone of "1 per person." The substantial function of this portable device is predicted from now on. The uses of the portable device with a wireless-communications function were the public network communication through (1) communication provider

(communication carrier), and communications (connection of a personal computer and a printer etc.) between (2) individuals' (or inside of their post) apparatus (a voice telephone, Internet access, etc.) until now.
[0004] In addition to this, communication ** between individual apparatus and an entrepreneur's apparatus which does not mind (3) communication provider is expected from now on. For example, it is thought that application, such as sending an advertisement, a rebate check, a variety of information, etc. to the above-mentioned portable device for the stores (for example, a supermarket, a convenience store, etc.) for the general public using a wireless-communications function, is attractive.
[0005]
[Problem to be solved by the invention] However, the technology for realizing (3) under the present circumstances is not established, but there is still no mechanism of sending an advertisement, a coupon, and a variety of information to a personal digital assistant.
[0006] The electronic coupon address method which enables transmission and reception of an electronic coupon between the apparatus by the side of a near system and users, such as an entrepreneur, without through [in consideration of the above-mentioned situation, not having made this invention, and] a communication provider, It aims at offering the electronic coupon recovery method, an electronic coupon sending system, an electronic coupon recovery system, a base transceiver station, and a radio personal digital assistant.
[0007]
[Means for solving problem] This invention (Claim 1) is the electronic coupon address method for sending an electronic coupon to a radio personal digital assistant from the base transceiver station of wireless LAN. The notice of the terminal identifier of this radio personal digital assistant is required of said radio personal digital assistant from said base transceiver station through said wireless LAN. Said base transceiver station is notified of the terminal identifier of this radio personal digital assistant from said radio personal digital assistant through said wireless LAN. A radio personal digital assistant with said notified terminal identifier requires investigation of being the candidate for sending of an electronic coupon of server equipment from said base transceiver station. When it is what shows that the radio personal digital assistant in which the result of this investigation has said terminal identifier is the candidate for sending of an electronic coupon Said base transceiver station is notified of the result of said investigation from said server equipment, and it is characterized by transmitting an electronic coupon to said radio personal digital assistant from said base transceiver station through said wireless LAN.
[0008] This invention (Claim 2) is the electronic coupon recovery method of collecting electronic coupons from a radio personal digital assistant to the base transceiver station of wireless LAN. The notice of the terminal identifier of this radio personal digital assistant is required of said radio personal digital assistant from said base transceiver station through said wireless LAN. Said base transceiver station is notified of the terminal identifier of this radio personal digital assistant from said radio personal digital assistant through said wireless LAN. A radio personal digital assistant with said notified terminal identifier requires investigation of being the candidate for recovery of an electronic coupon of server equipment from said base transceiver station. When it is what shows that the radio personal digital assistant in which the result of this investigation has said

terminal identifier is the candidate for recovery of an electronic coupon Said base transceiver station is notified of the result of said investigation from said server equipment, and it is characterized by performing processing for collecting the electronic coupons which have justification between said base transceiver station and said radio personal digital assistant through said wireless LAN.

[0009] This invention (Claim 3) is equipped with the base transceiver station of server equipment and at least one wireless LAN which manages information. Are the electronic coupon sending system which sends an electronic coupon to a radio personal digital assistant using wireless LAN, and [said base transceiver station] A means to transmit the 1st demand message which requires the notice of a terminal identifier of a radio personal digital assistant through said wireless LAN, A means to receive the 1st response massage which contains a terminal identifier from a radio personal digital assistant through said wireless LAN, A means by which a radio personal digital assistant with said terminal identifier contained in said 1st response massage which received transmits the 2nd demand message which requires investigation of being the candidate for sending of an electronic coupon to said server equipment, A means to receive the 2nd response massage which contains the results of an investigation to said 2nd demand message from said server equipment, When the results of an investigation which show that the radio personal digital assistant which has said terminal identifier in said 2nd response massage which received is the candidate for sending of an electronic coupon are contained A means by which it has a means to transmit an electronic coupon to this radio personal digital assistant through said wireless LAN, and said server equipment receives said 2nd demand message from said base transceiver station, The information about the terminal identifier of the radio personal digital assistant made applicable [of an electronic coupon] to sending is referred to. It is characterized by having a means to investigate whether a radio personal digital assistant with said terminal identifier contained in said 2nd demand message which received is the candidate for sending of an electronic coupon, and a means to transmit the 2nd response massage containing these results of an investigation to said base transceiver station.

[0010] A means by which said radio personal digital assistant receives said 1st demand message from said base transceiver station through said wireless LAN preferably, A means to transmit the 1st response massage which contains the terminal identifier of a self-terminal to said base transceiver station through said wireless LAN when said 1st demand message is received, You may make it have a means to receive an electronic coupon from said base transceiver station through said wireless LAN, and a means to accumulate said received electronic coupon.

[0011] [said base transceiver station] preferably when a radio personal digital assistant with said terminal identifier contained in said 1st response massage which received is the candidate for sending of an electronic coupon A means to transmit the 3rd demand message which requires transmission of the coupon identifier which shows the electronic coupon which should transmit to a radio personal digital assistant with this terminal identifier to said server equipment, From said server equipment, have further a means to receive the 3rd response massage containing said coupon identifier, and [said server equipment] A means to receive said 3rd demand message from said base transceiver station, A means to determine the coupon identifier which shows the electronic coupon which should transmit to a radio personal digital assistant with this terminal identifier

based on said terminal identifier contained in said 3rd demand message which received, It has further a means to transmit the 3rd response massage containing said determined coupon identifier to said base transceiver station, and said base transceiver station may be made to transmit an electronic coupon based on said coupon identifier contained in said 3rd response massage which received.

[0012] A means to transmit preferably the 4th demand message as which said base transceiver station demands the notice of a display contents description method of said radio personal digital assistant through said wireless LAN, It has further a means to receive the 4th response massage including the information which shows a display contents description method from said radio personal digital assistant through said wireless LAN. You may make it transmit the electronic coupon containing the display contents described by said display contents description method contained in said 4th response massage.

[0013] [said base transceiver station] preferably when a radio personal digital assistant with said terminal identifier contained in said 1st response massage which received is the candidate for sending of an electronic coupon A means to transmit the 5th demand message which requires transmission of the data of an electronic coupon which should be transmitted to a radio personal digital assistant with this terminal identifier to said server equipment, From said server equipment, have further a means to receive the data of said electronic coupon, and [said server equipment] A means to receive said 5th demand message from said base transceiver station, A means to determine the coupon identifier which shows the electronic coupon which should transmit to a radio personal digital assistant with this terminal identifier based on said terminal identifier contained in said 5th demand message which received, You may make it have further a means to transmit the data of the electronic coupon shown by said determined coupon identifier to said base transceiver station.

[0014] A means to transmit preferably the 4th demand message as which said base transceiver station demands the notice of a display contents description method of said radio personal digital assistant through said wireless LAN, It has further a means to receive the 4th response massage including the information which shows a display contents description method from said radio personal digital assistant through said wireless LAN. The information which shows said display contents description method contained in said terminal identifier contained in said 1st response massage and said 4th response massage is included. A means to transmit the 6th demand message which requires transmission of the data of an electronic coupon which should be transmitted to a radio personal digital assistant with this terminal identifier to said server equipment, From said server equipment, have further a means to receive the data of said electronic coupon, and [said server equipment] A means to determine the coupon identifier which shows the electronic coupon which should transmit to a radio personal digital assistant with this terminal identifier based on said terminal identifier contained in a means to receive said 6th demand message from said base transceiver station, and said 6th demand message which received, You may make it have further a means to transmit the data of the electronic coupon containing the display contents which are the electronic coupons shown by said determined coupon identifier, and were described by said display contents description method to said base transceiver station.

[0015] A means by which said radio personal digital assistant receives said 4th demand

message from said base transceiver station through said wireless LAN preferably, A means to transmit the 4th response massage which includes the information which shows the display contents description method of a self-terminal to said base transceiver station through said wireless LAN when said 4th demand message is received, You may make it have a means to display the display contents described by said display contents description method contained in the received electronic coupon on a display screen.
[0016] You may make it said electronic coupon contain the coupon identifier for identifying this electronic coupon uniquely, and the display contents about this electronic coupon at least preferably.
[0017] You may make it said electronic coupon also include the control information about the expiration date of this electronic coupon preferably.
[0018] [said electronic coupon / the portion which contains at least what should be protected from an alteration among the data of this electronic coupon] preferably You may make it also include the electronic signature enciphered and obtained using the key currently held without being known from the outside in said base transceiver station and/or said server equipment.
[0019] [said electronic coupon / the terminal identifier of the radio personal digital assistant which should transmit the portion and this electronic coupon which contain at least what should be protected from an alteration among the data of this electronic coupon] preferably You may make it also include the electronic signature enciphered and obtained using the key currently held without being known from the outside in said base transceiver station and/or said server equipment.
[0020] This invention (Claim 14) is equipped with the base transceiver station of server equipment and at least one wireless LAN which manages information. Are the electronic coupon recovery system which collects electronic coupons from a radio personal digital assistant using wireless LAN, and [said base transceiver station] A means to transmit the 1st demand message which requires the notice of a terminal identifier of a radio personal digital assistant through said wireless LAN, A means to receive the 1st response massage which contains a terminal identifier from a radio personal digital assistant through said wireless LAN, A means by which a radio personal digital assistant with said terminal identifier contained in said 1st response massage which received transmits the 2nd demand message which requires investigation of being the candidate for recovery of an electronic coupon to said server equipment, A means to receive the 2nd response massage which contains the results of an investigation to said 2nd demand message from said server equipment, When the results of an investigation which show that the radio personal digital assistant which has said terminal identifier in said 2nd response massage which received is the candidate for recovery of an electronic coupon are contained A means to transmit the 3rd demand message which requires the presentation of an electronic coupon used as this radio personal digital assistant for recovery through said wireless LAN, A means to receive the 3rd response massage containing data required for verification of the justification of information and this electronic coupon which can specify the electronic coupon made applicable to recovery at least from a radio personal digital assistant through said wireless LAN, Data required for verification of the justification of information and this electronic coupon which can specify said electronic coupon contained in said 3rd response massage which received at least is included. A means to transmit the 4th demand message which requires the check of the justification

of this electronic coupon to said server equipment, A means to receive the 4th response massage which includes the check result of said 4th demand message from said server equipment, When the check result which shows the purport that said electronic coupon is just is included in said 4th response massage which received Have a means to transmit the 5th demand message which directs elimination of the data of said electronic coupon used as this radio personal digital assistant for recovery through said wireless LAN, and [said server equipment] A means to receive said 4th demand message from said base transceiver station, and a means to check the justification of said electronic coupon based on the data contained in said 2nd demand message which received, It is characterized by having a means to transmit the 4th response massage including this check result to said base transceiver station.

[0021] When said electronic coupon is just, you may make it said server equipment equip register equipment with a means to direct the service processing corresponding to this electronic coupon, further preferably as a result of said check.

[0022] Preferably [the said 3rd and 4th demand messages] [the portion which contains at least what should be protected from an alteration among the data of an electronic coupon] Said server equipment including the data for verifying electronic signature and this electronic signature enciphered and obtained using the same key as the key currently held without being known from the outside in said server equipment [with verification of said electronic signature] You may make it check the justification of said electronic coupon.

[0023] Preferably [the said 3rd and 4th demand messages] [the terminal identifier of the radio personal digital assistant which should transmit the portion and this electronic coupon which contain at least what should be protected from an alteration among the data of an electronic coupon] You may make it said server equipment check the justification of said electronic coupon by verification of said electronic signature including the data for verifying the electronic signature and this electronic signature which were enciphered and obtained using the same key as the key currently held without being known from the outside in said server equipment.

[0024] [said electronic coupon made applicable to recovery] preferably It is the electronic coupon currently displayed on the display screen of said radio personal digital assistant, and when said 5th demand message is received, you may make it said radio personal digital assistant eliminate the data of the electronic coupon currently displayed on said display screen from a memory means.

[0025] A means to transmit the demand message which this invention (Claim 19) is a base transceiver station for sending an electronic coupon to a radio personal digital assistant using wireless LAN, and requires the notice of a terminal identifier of a radio personal digital assistant through said wireless LAN, A means to receive the response massage which contains a terminal identifier from a radio personal digital assistant through said wireless LAN, The means for investigating whether a radio personal digital assistant with said terminal identifier contained in said response massage which received is the candidate for sending of an electronic coupon, When a radio personal digital assistant with said terminal identifier is the candidate for sending of an electronic coupon as a result of this investigation, it is characterized by having a means to transmit an electronic coupon to this radio personal digital assistant through said wireless LAN.

[0026] A means to transmit the demand message which this invention (Claim 20) is a

base transceiver station for collecting electronic coupons from a radio personal digital assistant using wireless LAN, and requires the notice of a terminal identifier of a radio personal digital assistant through said wireless LAN, A means to receive the response massage which contains a terminal identifier from a radio personal digital assistant through said wireless LAN, The means for investigating whether a radio personal digital assistant with said terminal identifier contained in said response massage which received is the candidate for recovery of an electronic coupon, A means to transmit the demand message which requires the presentation of an electronic coupon used as this radio personal digital assistant for recovery through said wireless LAN when a radio personal digital assistant with said terminal identifier is the candidate for recovery of an electronic coupon as a result of this investigation, It is characterized by having a means to receive the response massage including the information that the electronic coupon made applicable to recovery at least from a radio personal digital assistant through said wireless LAN can be specified.

[0027] You may make it have preferably the radio shield part which shields the radio signal from one way at least.

[0028] [the radio personal digital assistant concerning this invention (Claim 22)] By the means of communication for communicating with the base station of the wireless LAN arranged in a store, and said means of communication, through said wireless LAN among said base transceiver stations A means to perform processing for receiving sending of an electronic coupon published by said store, A means to accumulate said electronic coupon received from said base transceiver station through said wireless LAN by said means of communication, The display contents contained in said electronic coupon accumulated into the self-terminal through said wireless LAN by means to display on the display screen which accompanies a self-terminal, and said means of communication among said base transceiver stations It is characterized by having a means to perform processing for using said usable electronic coupon accumulated into the self-terminal at said store, and a means to perform processing for eliminating said used electronic coupon from the inside of a self-terminal.

[0029] In addition, this invention concerning equipment or a system is materialized also as invention concerning a method, and this invention concerning a method is materialized also as invention concerning equipment or a system. Moreover, this invention concerning a system is materialized also as invention concerning a radio personal digital assistant, invention concerning a base transceiver station, or invention concerning server equipment. Moreover, the subclaim concerning each invention is materialized also as a subclaim concerning other invention.

[0030] Moreover, this invention concerning equipment or a method is in order to make a computer perform the procedure equivalent to the invention concerned (or for operating a computer as a means equivalent to the invention concerned). Or it is materialized also as a recording medium which recorded the program for realizing the function equivalent to the invention concerned on the computer and in which computer reading is possible.

[0031] In this invention, the notice of a terminal identifier is required of a radio personal digital assistant from a base transceiver station through wireless LAN in the case of sending of an electronic coupon. A base transceiver station is notified of a terminal identifier from a radio personal digital assistant through wireless LAN. A radio personal digital assistant with the terminal identifier notified to server equipment from the base

transceiver station requires investigation of being the candidate for sending of an electronic coupon. A base transceiver station is notified of the result of investigation from server equipment, and when it is what shows that the result of this investigation is the candidate for sending of an electronic coupon, an electronic coupon is transmitted to a radio personal digital assistant from a base transceiver station through wireless LAN. In this invention, the notice of a terminal identifier is required of a radio personal digital assistant from a base transceiver station through wireless LAN in the case of recovery of an electronic coupon. A base transceiver station is notified of a terminal identifier from a radio personal digital assistant through wireless LAN. A radio personal digital assistant with the terminal identifier notified to server equipment from the base transceiver station requires investigation of being the candidate for recovery of an electronic coupon. A base transceiver station is notified of the result of investigation from server equipment, and when it is what shows that the result of this investigation is the candidate for recovery of an electronic coupon, processing for collecting the electronic coupons which have justification between a base transceiver station and a radio personal digital assistant through wireless LAN is performed. According to such this invention, transmission and reception of an electronic coupon are attained between the radio personal digital assistants by the side of a near system and users, such as an entrepreneur, without through a communication provider.

[0032]

[Mode for carrying out the invention] The form of implementation of invention is explained hereafter, referring to Drawings.

[0033] In this embodiment, for example like what is called a rebate check and a service coupon, by carrying out presentation etc. according to certain conditions usually A fixed discount, What electronized the thing similar to the ticket or this which can receive gratis inheritance, warm treatment, or a privilege (information) is called an electronic coupon. In addition, various functions can be given to this electronic coupon by adding required information or using encoding technology etc.

[0034] As an institution which performs distribution of an electronic coupon etc. and performs discount which receives presentation of an electronic coupon etc. and corresponds, voluntary conveyance, etc. in this embodiment For example, the store which sells various things, the store which provides various services for counter value, the store which rents various things (as an example), etc. although it is similar to a supermarket, a convenience store, or them -- many kinds of stores, such as others, a bookstore, a fast food restaurant, a beauty parlor, and a video rental shop, -- corresponding -- it assumes and explains. Although the form of this operation is explained below using language, such as a store and a visitor, of course, this invention is applicable to institutions or places other than a store and other than the profit purpose etc.

[0035] In this embodiment, electronic coupons are electronically distributed / collected for the person using a certain institution etc. (it is all or certain conditions are fulfilled), for example, the visitor who is in a store (it is all or certain conditions are fulfilled). The equipment used as the object which distributes / collects electronic coupons from the store side system is portable equipment which a visitor possesses. Although what added the function for an electronic coupon to the equipment which has an original function like a cellular phone or PDA is sufficient as this portable equipment and the equipment only for an electronic coupon is sufficient as it, below, it calls them a personal digital assistant

generically.
[0036] What is called wireless LAN shall be used for communication Media used for ****** of the electronic coupon between the store side system and the personal digital assistant which a visitor possesses in this embodiment. Although explained below supposing the case where Bluetooth which is one of the wireless LAN systems is used, of course, this invention can be carried out also by wireless LAN systems other than Bluetooth. In addition, bluetooth is a radio method with which being widely built in a personal digital assistant is expected, and manages wireless communication of a short distance (for example, indicated in detail by "http://www.bluetoth.com").
[0037] Below, the example of the system which related sending/recovery of an electronic coupon with the register of a retail store is explained as a center.
[0038] The example of composition of the electronic coupon service system applied to drawing 1 at this embodiment is shown.
[0039] [this electronic coupon service system] It has the coupon server 104 which manages the information about the base transceiver station 102 for performing the exchange about an electronic coupon between the personal digital assistants (radio personal digital assistant) 105 which the visitor who is in a register 101 and a store possesses, and an electronic coupon etc., and Ethernet 103. For example, a register 101 and the base transceiver station 102 are stationed, the coupon server 104 is arranged and they are connected to the desk 100 in the area called what is called the register or accounts in a store with Ethernet 103 in the management office in the inner part of the inside of this area, or a store etc.
[0040] [the communication on Ethernet / be / the great portion of online-communications application (for example, POS processing application) of these days / a TCP/IP base] Communication between a register 101, the base transceiver station 102, and the coupon server 104 shall be performed with a TCP/IP base according to this.
[0041] On the other hand, communication between the base transceiver station 102 and the personal digital assistant 105 which the visitor who is in a store possesses shall be performed with a bluetooth base. By doing in this way, [the communication between the base transceiver station 102 and the personal digital assistant 105] It can carry out now, without going via local communication (a communication carrier, an internet service provider, etc.), i.e., what is called providers, and there is an advantage of a communication fee not occurring in an exchange of an electronic coupon.
[0042] In addition, in drawing 1 , although 1 set of a register/base transceiver stations are shown, it is also possible to, connect two or more sets of a register/base transceiver stations according to the scale of a store etc., of course. Moreover, not the composition that sets a register and a base transceiver station to 1 to 1 but the composition which shares 1 or two or more base transceiver stations by two or more registers is possible. Moreover, for example, you may prepare the base transceiver station only for coupon sending.
[0043] Moreover, in drawing 1 , although the register assumes the thing with the input function by a bar code, it may not have a bar code input function and may have an input function according [or] to other input devices, such as a touch panel. Moreover, a register may be equipped what is called with the function of POS, and does not need to be equipped with a POS function (a coupon server may serve as a POS server in this case).
[0044] The example of the appearance of a register 101 is shown in drawing 1 .

[0045] [a register] although a register 101 has the functions (for example, calculation of input functions, such as goods data based on a bar code or a ten key, or amount-of-money data, the amount of money for purchase, a tax, change, etc., presenting of goods pertinent information, printing, storage of a bill and a coin, etc.) of an original register In addition, in this embodiment, the coupon sending button 111 and the coupon recovery button 112 for starting the sending processing of an electronic coupon and recovery processing which went via the base transceiver station 102 are attached.
[0046] In addition, a button separate as mentioned above is sufficient as these buttons, and they may be prepared as one coupon sending / recovery button. Moreover, such a button may be attached to the register 101 as mentioned above, may be attached to the base transceiver station 102, may be attached to both, and may be attached to other equipment. Or composition which prepares the base transceiver station 102 a coupon sending button, and prepares a coupon recovery button in a register 101 is also possible. Of course, you may be elements other than a button and GUI or voice input may be used. Below, it explains as that by which the separate sending button 111 and the recovery button 112 are prepared for the register 101.
[0047] The example of the appearance of the base transceiver station 102 and a relation with the personal digital assistant 105 in this case are shown in drawing 2 .
[0048] the base transceiver station 102 -- appearance ---like -- radio transmission-and-reception **** 121, the radio shield 122, and a plinth 123 -- **** -- it is constituted. The radio shield 122 is prepared in order to suppress interference with the wireless communications between radio transmission-and-reception **** 121 - the personal digital assistant 105, and external radio to the minimum, and it plays the role which covers external radio (frequency which this wireless LAN uses especially).
[0049] Namely, although the microwave oven is arranged at the supermarket, the convenience store, etc. in a register area, its neighborhood, etc. in many cases Since a microwave oven heats a content by sending electromagnetic waves using the 2.4GHz belt which is the frequency generally used by the wireless LAN in the world, the electric wave emitted from a microwave oven for the wireless communications of the base transceiver station 102 and the personal digital assistant 105 will become a noise source. Moreover, the electric waves which each emits may interfere in the environment where two or more base transceiver stations 102 have stood in a line. Then, this radio shield 122 aims at making the radio disturbance factor from these microwave oven, other base transceiver stations, etc. into the minimum.
[0050] In addition, although drawing 2 shows the example which performed a certain cover of the 1st page (one direction), it is more effective if cover more than the 2nd page (a 2-way, 90 degrees) is performed.
[0051] The example of composition of the electronic coupon of this embodiment is shown in drawing 3 .
[0052] A "terminal display screen description part" is the portion which described the information about the electronic coupon concerned, and is information which enables the display to a display screen.
[0053] Various things can be set up as contents of this information. For example, the character and/or picture which give explanation about the electronic coupon concerned the contents are sufficient. Moreover, you may include advertisement information, including a store, goods, etc. Moreover, the voice information may be included.

[0054] Moreover, as for this terminal display screen description part, it is desirable to be described by the grammar (for example, compact HTML (C-HTML)) according to the form which can be displayed with the personal digital assistant which became the object which sends an electronic coupon from the system side.
[0055] "Coupon ID" is the discernment information on the electronic coupon concerned. In addition, an electronic coupon shall consist of a coupon ID at worst.
[0056] The coupon server 104, the base transceiver station 102, and the personal digital assistant 105 all perform search required for the processing about an electronic coupon by using Coupon ID as a key.
[0057] The "expiration date" is the term of validity of the electronic coupon concerned. In addition, the expiration date has a method on the basis of the time of the date of issue, a method on the basis of the time beforehand defined irrespective of the time of the date of issue, etc.
[0058] "Copy control information" is control information about redistribution by the copy between the personal digital assistants of the electronic coupon concerned, and is information which shows the propriety of a copy, for example. That is, in the case of the coupon of the conventional paper, what a coupon is copied and transfers to people is not usually performed, but the electronic coupon which is digital data can reproduce the same thing completely by a copy. Then, copy control information can perform control about redistribution by the copy between the personal digital assistants of the electronic coupon concerned. For example, when the copy between the personal digital assistants of the electronic coupon concerned is possible when copy control information shows copy ****, and copy control information shows a copy failure, it cannot copy.
[0059] Moreover, the electronic coupon concerned can also be made into the number of times which can be redistributed between personal digital assistants for "copy control information." The personal digital assistant which acquired the electronic coupon concerned to the beginning in this case is that only the number of times shown with the number which can be copied can redistribute the electronic coupon concerned to other personal digital assistants. In addition, copy control information =0 is good in this case also as what shows a failure for a copy.
[0060] in addition, although it can redistribute, in treating an electronic coupon which has restriction in the number of times of a copy it is, if the function for forbidding the use of an electronic coupon which the number of times of a copy broke the delivery and/or the number-of-times restrictions of a copy between the personal digital assistants of the electronic coupon which reached restriction, and was delivered and carried out between personal digital assistants is prepared -- **
[0061] In addition, there is also a method whose copy is always enabled, without establishing the item of "copy control information." Similarly there is also the method of making it always impossible [a copy], without establishing the item of "the number which can be copied."
[0062] Moreover, although it is the case where the data of an electronic coupon is copied between personal digital assistants, in the above-mentioned example, when the data of an electronic coupon is transmitted to the personal digital assistant of another side from one personal digital assistant, the method of eliminating the data of the electronic coupon this transmitted in one [this] personal digital assistant is also possible. In this case, the "transfer control information" which shows the propriety of transfer of the electronic

coupon between the above personal digital assistants instead of the above-mentioned "copy control information", for example is used.
[0063] An "issue store" is ID of a store which published the coupon concerned first.
[0064] "Issue time" is the time which published the coupon concerned first.
[0065] Here, in the data fur mat of drawing 3 , the portion except a terminal display screen description part shall be called coupon main data. By setting up the format of coupon main data suitably, various control about use of an electronic coupon, delivery between personal digital assistants, etc. can be performed.
[0066] Moreover, portions other than coupon main data shall be called coupon subdata. In the example of drawing 3 , although a terminal display screen description part is added as coupon subdata, various functions can be given to an electronic coupon by setting up the format of coupon subdata suitably. In addition, coupon subdata is not indispensable.
[0067] As a data format of coupon main data, it is also possible to use XML and C-HTML. In this case, it is possible to exchange coupon main data and coupon subdata with a coupon server as one XML sentence or a C-HTML sentence on the whole collectively.
[0068] The example of an internal configuration of the base transceiver station 102 is shown in drawing 4 .
[0069] As shown in drawing 4 , [the base transceiver station 102] [the processing for communication by Ethernet] The Ethernet interface to perform (I/F) [the processing for communication by the part 201 and wireless LAN] [the processing for the exchange between the personal digital assistants about the coupon server communications processing part 203 which performs processing for the exchange between the coupon servers about the radio interface (I/F) part 202 and electronic coupon to perform, and an electronic coupon] It has the personal digital assistant communications processing part 204 to perform, the coupon creation information accumulation part 205 which accumulates the information about an electronic coupon, the scrambling part 206 which performs scrambling about an electronic coupon, and the terminal ID accumulation part 207 which accumulates the terminal ID of the target personal digital assistant.
[0070] The coupon creation information accumulated in the coupon creation information accumulation part 205 has the format which consists of a group with the information (for example, information except the unspecified part of drawing 3) which serves as a basis which creates Coupon ID and the electronic coupon of the coupon ID concerned, for example.
[0071] Coupon creation information is distributed from a coupon server or other management servers in advance, for example.
[0072] Moreover, Key Kp is built in the scrambling part 206 so that it cannot know from the outside. Or Key Kp is safely acquired from the coupon server 104 in the scrambling part 206 of the base transceiver station 102.
[0073] The example of an internal configuration of the coupon server 104 is shown in drawing 5 .
[0074] As shown in drawing 5 , [the coupon server 104] It has the Ethernet interface part 401 which performs processing for communication by Ethernet, the coupon processing part 402 which performs processing about an electronic coupon, the user management information storage part 403 which memorizes user management information, and the coupon management information storage part 404 which memorizes coupon management information. In addition, here shows only the portion related to an

electronic coupon.
[0075] The example of composition of user management information is shown in drawing 6 .
[0076] A "use ID" is the discernment information of the user concerned.
[0077] "User attribute information" is personal information, such as an address of the user concerned, a name, age, and sex.
[0078] "Terminal ID" is the terminal ID of the personal digital assistant registered about the user concerned.
[0079] "Service information" is information which shows whether the user concerned is set as the object of sending/recovery of an electronic coupon. For example, [it is also possible to set only what is called a coupon member as the object of sending/recovery of an electronic coupon, and] Only a specific user (for example, user who did declaration of intention of not using the electronic coupon of our shop) is able to set all the registered users as the object of sending/recovery, and to remove them from the object of sending/recovery in principle.
[0080] In addition, it can also carry out setting possible [of the information which shows / which subdivided service information more, for example, packed every electronic coupon and two or more kinds of electronic coupons / whether it is considered as the object of sending/recovery of an electronic coupon for every group]. For example, the electronic coupon sent only to a coupon member and the electronic coupon sent to all the registered users can be used properly.
[0081] Moreover, [on condition that Terminal ID is registered into user management information and service information shows that it is the object of sending/recovery of an electronic coupon here, the example in the case of performing sending/recovery of an electronic coupon between the personal digital assistants concerned is shown, but] For example, on condition that Terminal ID is registered into user management information, when performing sending/recovery of an electronic coupon between the personal digital assistants concerned, it is not necessary to establish the item of "service information."
[0082] In addition, the history information about the electronic coupon sent to the user concerned at user management information, for example, When the history information about the electronic coupon which the user concerned used, and the next have a demand, you may also include the various information about electronic coupons, such as information for specifying the information or it which shows the electronic coupon sent to the user concerned.
[0083] Moreover, you may also include various information, including the merchandise purchase history information of the user concerned, coming-to-the-store history information, etc., in user management information.
[0084] On the other hand, the coupon management information accumulated in the coupon management information storage part 404 has the format which consists of a group with the information which shows the contents of Coupon ID and the electronic coupon of the coupon ID concerned, for example.
[0085] The contents of the electronic coupon are information, including the target product of the electronic coupon concerned in the case of a rebate check [in / in the electronic coupon concerned / a retail store], and the amount of money for discount, for example.
[0086] Moreover, it is also possible to include the information which shows the use

conditions of the electronic coupon concerned in the information which shows the contents of this electronic coupon. For example, there is information (for example, information which shows that it becomes the object of one of the discount of it when two or more same goods are purchased) which shows the maximum of the goods number to which the electronic coupon concerned can apply the electronic coupon concerned in the case of the rebate check in a retail store, for example.
[0087] Moreover, the coupon processing part 402 has a scrambling function, and it builds in Key Kp (the same key as a base transceiver station) so that it cannot know from the outside.
[0088] The example of an internal configuration of the personal digital assistant 105 is shown in drawing 7 .
[0089] As shown in drawing 7 , [the personal digital assistant 105] It has the wireless LAN interface part 501 which performs processing for communication by wireless LAN, the coupon processing part 502 which performs processing about an electronic coupon, the electronic coupon accumulation part 503 which accumulates an electronic coupon, and the display part 504 whose display of the information about an electronic coupon is enabled. In addition, here shows only the portion related to an electronic coupon.
[0090] The example of an internal configuration of a register 101 is shown in drawing 8 .
[0091] The register 101 is equipped with the Ethernet interface part 113 which performs processing for communication by Ethernet, the coupon processing part 114 which performs processing about an electronic coupon, the coupon sending button 111, and the coupon recovery button 112 as shown in drawing 8 . In addition, here shows only the portion related to an electronic coupon.
[0092] An example of the sequence at the time of sending an electronic coupon to drawing 9 from the system side to a personal digital assistant in the above examples of composition is shown.
[0093] First, a visitor performs the proposal of the purport "send a coupon into this personal digital assistant" [in stores such as a supermarket and a convenience store,], the personal digital assistant 105 is passed to a salesclerk, and a salesclerk brings that personal digital assistant 105 close to the base transceiver station 102 (or it carries out placing etc.). Or while a visitor gives a salesclerk the above-mentioned proposal, the visitor himself brings the personal digital assistant 105 close to the base transceiver station 102 (or it carries out placing etc.).
[0094] Next, a salesclerk pushes the coupon sending button (refer to drawing 1) of a register 101 (S1). By pushing this coupon sending button, sending processing of the electronic coupon to the personal digital assistant 105 is started.
[0095] First, a register 101 will transmit the message which directs a coupon sending processing start to the base transceiver station 102, if a coupon sending button is pushed (S2).
[0096] The base transceiver station 102 to which the coupon sending processing start was directed by the above-mentioned message demands Terminal ID from the personal digital assistant 105 (S3).
[0097] In Terminal ID, it is the thing of discernment information which can identify a personal digital assistant uniquely, and has a different value for every personal digital assistant. As a terminal ID, a bluetooth address can be used, for example. Here, the terminal ID of the target personal digital assistant 105 is set to x.

[0098] The personal digital assistant 105 which received this demand answers the base transceiver station 102 the message of the purport that it is terminal ID=x (S4).
[0099] Next, the base transceiver station 102 transmits the message which asks terminal ID=x about whether the personal digital assistant 105 which answered is registered as an object of electronic coupon sending to the coupon server 104 (S5).
[0100] [the coupon server 104 which received the message of this inquiry] It is investigated [the user management information in a self-server is retrieved by using terminal ID=x as a key, and terminal ID=x is registered, and service information "makes the object of sending/recovery of an electronic coupon"] whether it is registered like (S6). When registered, the base transceiver station 102 is notified of the message of the purport that it is registered. When not registered, the message of the purport that it is not registered is notified (S7).
[0101] When the notice of the purport that it is not registered is received, the base transceiver station 102 ends processing (the end of processing is notified to other equipment if needed).
[0102] If the message of the purport that it is registered is received, the base transceiver station 102 will go into the personal digital assistant 115 at the processing for sending an electronic coupon.
[0103] First, the base transceiver station 102 investigates whether the function about an electronic coupon exists in the personal digital assistant 105 side. Here, although SDP (service detection protocol) of bluetooth shall perform this procedure, it is not limited to this.
[0104] The base transceiver station 102 transmits the service search demand about the service about an electronic coupon to the personal digital assistant 105 (S8). The personal digital assistant 105 which received this service search demand answers the message of the purport that this service does not exist, when it does not answer and exist the message of the purport that this service exists when the service about an electronic coupon exists in a self-terminal in the base transceiver station 102 (S9).
[0105] When the message of the purport that it does not exist is received, the base transceiver station 102 ends processing (the end of processing is notified to other equipment if needed).
[0106] If the message of the purport that it exists is received, the base transceiver station 102 will transmit the message which asks the electronic coupon which should transmit to the coupon server 104 to the personal digital assistant 105 of this terminal ID=x (S10).
[0107] The coupon server 104 which received the message of this inquiry determines the electronic coupon which should transmit to the personal digital assistant 105 of terminal ID=x.
[0108] Although the method of this determination is not limited to a specific method, the predetermined algorithm (program) prepared beforehand performs it, for example. Moreover, you may use user management information and coupon management information in that case.
[0109] [the coupon server 104 which sets the information about the electronic coupon for which it asked beforehand, and which should be sent as user management information as other methods, and received the message of the inquiry] User management information is retrieved and you may make it ask for the electronic coupon which should transmit to the personal digital assistant 105 of terminal ID=x.

[0110] Next, the coupon server 104 transmits the message including the information (for example, list information on Coupon ID) about the electronic coupon which should transmit to the base transceiver station 102 (S11). Here, the electronic coupons which should transmit shall be "three kinds of electronic coupons, coupon ID=A, B, and C."
[0111] The base transceiver station 102 which received this message creates the electronic coupon which should be sent according to (recognizing what three kinds of electronic coupons, coupon ID=A, B, and C, should be sent for to the personal digital assistant 105 of terminal ID=x in this example), and the notified coupon ID.
[0112] [here / the personal digital assistant of these days] although it has a browser on the liquid crystal display and the soft target physically and the display of the character screen or the multimedia screen is attained As a display contents description form (display style), the present condition is that various methods, such as HTML and Compacts HTML (C-HTML) and WAP, are flooding. Then, he is trying to create the electronic coupon containing the terminal display screen description part united with the display contents description method by the side of a personal digital assistant to demand by the base transceiver station 102 side here.
[0113] That is, the base transceiver station 102 first transmits the message asked about the ability of the display screen to display [of what kind of description method] display contents to the personal digital assistant 105 (S12).
[0114] [the personal digital assistant 105 which received the message of this inquiry] The base transceiver station 102 is answered in the message including the information which shows the display contents description form (or other display contents description form convertible [with a self-terminal] into the display contents description form) which can be expressed as a self-terminal as it is (S13).
[0115] The base transceiver station 102 will adopt this notified display contents description form as a description form of the terminal display screen description part (refer to drawing 3) of an electronic coupon. Here, supposing C-HTML was notified as a display contents description form, the terminal display screen description part of the electronic coupon was described by C-HTML.
[0116] In addition, you may make it create the terminal display screen description part by the notified display contents description form at this time, and the terminal display screen description part by various kinds of display contents description form may be accumulated beforehand.
[0117] In addition, processing is ended when the display contents description form notified from the personal digital assistant 105 cannot be prepared (the end of processing is notified to other equipment if needed).
[0118] Now, as the base transceiver station 102 which preparation of electronic coupon creation completed as mentioned above explains in full detail behind, the electronic coupon corresponding to the notified coupon ID is created (S14).
[0119] And the base transceiver station 102 sends the created electronic coupon to the personal digital assistant 105 through wireless LAN, such as bluetooth, (S15).
[0120] The personal digital assistant 105 accumulates the electronic coupon received from the base transceiver station 102 through wireless LAN, such as bluetooth.
[0121] In addition, the above-mentioned procedure can be changed suitably, for example, the demand of S5 and S10 etc. is performed by one message, and it can also perform the response of S7 and S11 etc. by one message. Moreover, it is also possible to perform the

demand of S3 and S8 etc. by one message, and to, perform the response of S8 and S9 etc. by one message for example.
[0122] Below, creation of the electronic coupon in the above-mentioned base transceiver station 102 is explained in detail.
[0123] First, application of scrambling to an electronic coupon is explained.
[0124] That is, in the state of **** data, as for an electronic coupon, dishonest acts, such as an alteration (for example, increase in extension of the term of validity, the amount of money for discount, or a rate), become easy. Usually, since it is assumed that data not to alter is contained in an electronic coupon, it is desirable to apply encoding technology to an electronic coupon and to prevent injustice.
[0125] As one method for this, electronic signature shall be used by this embodiment. [namely, the main part (for example whole of drawing 3) of the electronic coupon created as the base transceiver station 102 showed drawing 10 (a)] The electronic signature to all the data (for example, whole of drawing 3) of the main part of the electronic coupon concerned, some data (for example, portion of the coupon main data of drawing 3), or the hash of those is given, and this is sent to the personal digital assistant 105.
[0126] Electronic signature receives all (referred to as p) of the main parts of an electronic coupon, its part (it is considered as p'), or its hash (referred to as f (p) or f (p')), for example. It is data ([p] Kp, [p'] Kp, [f(p)] Kp, or [f(p')] Kp) generated by the fixed code algorithm using the key (referred to as Kp) which only a coupon server and a base transceiver station can know.
[0127] In addition, in the case of drawing 3 , you may except a terminal display screen description part as an object of electronic signature. [this] since the contents and the term of validity of an electronic coupon, the propriety of a copy, etc. are good if Coupon ID etc. is not altered It is because excessive time and effort will be taken at computation time or the Information Transfer Sub-Division time in the case of creation of electronic signature, or a check if a terminal display screen description part is also kept as the object when satisfactory even if a terminal display screen description part is altered by the loan.
[0128] In addition, although drawing 10 (a) is the method of not using Terminal ID for electronic signature, in addition to the data of an electronic coupon, the method also using the terminal ID (this example x) of the personal digital assistant which was the target of sending is also in electronic signature like drawing 10 (b). In this case, or electronic signature receives those terminals ID, such as hash, in part, for example. [the main part of an electronic coupon] It is data generated by the fixed code algorithm (for example, encryption) using the key Kp which only a coupon server and a base transceiver station can know ([p, x] Kp, [p', x] Kp, [f(p, x)] Kp, or [f(p', x)] Kp).
[0129] [the system side which performed recovery processing of an electronic coupon from the personal digital assistant by using such electronic signature] It can check that the received electronic coupon is not altered by checking that the data of electronic signature with which the data obtained by the same procedure as the time of creating the above-mentioned electronic signature was added to this electronic coupon is the same to an electronic coupon.
[0130] Or the data which gave and obtained the inverse function (for example, decoding) of the above-mentioned fixed code algorithm using the same key Kp as the electronic signature added to the received electronic coupon, You may make it compare the data

(namely, all of main parts or in part or the hash (and terminal ID) etc.) obtained from the electronic coupon received according to how to ask for the data of the preceding paragraph story which gives the above-mentioned fixed code algorithm.
[0131] By the way, how to use versatility can be considered about an electronic coupon. For example, the electronic coupon with which (1) redistribution was allowed (that is, way these other personal digital assistants make this electronic coupon usable from a base transceiver station even if it transmits the data of this electronic coupon to the beginning from the personal digital assistant which received the electronic coupon to other personal digital assistants), (2) Electronic coupon (that is, method of making this electronic coupon usable from base transceiver station only with personal digital assistant which received electronic coupon to the beginning) ** to which redistribution was forbidden can be considered. In addition, as mentioned above, in (1), there are a method of copying an electronic coupon between personal digital assistants and the method of eliminating this electronic coupon from the personal digital assistant of the transmission origin of an electronic coupon.
[0132] How to use the above-mentioned electronic coupon can respond by the electronic signature of drawing 10 (b) to the electronic signature of drawing 10 (a), and (2) to (1), for example.
[0133] In drawing 10 (a), since there is no field which checks the terminal ID of a personal digital assistant to electronic signature, even if this electronic coupon is in every personal digital assistant, it can be used. That is, if this electronic coupon is transmitted to other personal digital assistants (terminal ID!=x) from the personal digital assistant of terminal ID=x, these other personal digital assistants can use this electronic coupon. In addition, you may make it display guidance of "this coupon being copied" or "redistribution being possible" on the display screen of a personal digital assistant in the case of the electronic coupon of drawing 10 (a).
[0134] Since terminal ID=x of the personal digital assistant which received the electronic coupon concerned first to electronic signature is also contained in drawing 10 (b) By preparing for the system side the algorithm which checks the electronic signature using the terminal ID of the personal digital assistant which uses an electronic coupon Since "ID=x" is reflected in electronic signature even if it transmits this whole electronic coupon to other personal digital assistants (terminal ID!=x) In the personal digital assistant of terminal ID!=x, it becomes possible to realize the coupon which cannot use the electronic coupon concerned but can be used only with a specific personal digital assistant. In addition, you may make it display "this coupon not being copied" or the guidance "only you can use this coupon" on the display screen of a personal digital assistant in the case of the coupon of drawing 10 (b).
[0135] In addition, about the electronic coupon which forbids redistribution, you may encipher and transmit this in the case of the transmission to a personal digital assistant from a base transceiver station. This becomes possible to prevent the fraudulent procurement of the electronic coupon by another personal digital assistant what is called by tapping.
[0136] In addition, also in drawing 10 (a), also in drawing 10 (b), a user can create an electronic coupon no longer electronically uniquely. That is, since this electronic signature is enciphered using the key which only the system side can know, only the system side can make this electronic signature.

[0137] Moreover, you may make it use the value of a different key for every every store, time, or time zone about the key used for creation of electronic signature for improvement in safety. Or you may make it choose a key at random for every creation of electronic signature.
[0138] In addition, although the common key encryption system is taken for the example, of course, it is also possible to use a public-key crypto system here.
[0139] Moreover, it is also possible to use the electronic signature of drawing 10 (a) also the case of (1) or in the case of (2), and to control by other structure about prohibition of redistribution (for example, what is necessary is just to use the method of making improper the delivery between the personal digital assistants of the electronic coupon of the ban on redistribution itself).
[0140] An example of the generation procedure of the electronic coupon in the base transceiver station 102 is shown in drawing 11 .
[0141] Here, the hash to the portion of the coupon main data of an electronic coupon is used as an object of electronic signature. Taking the case of the case where the method of drawing 10 (a) or drawing 10 (b) is properly used with an electronic coupon using encryption, it explains to scrambling for electronic signature using the key which changes with dates. In this case, it shall have the function in which the coupon server 104 looks for a key from the date, and a key shall be delivered to the base transceiver station 102 safely from the coupon server 104. Moreover, the information (for example, used in common at the issue time of an electronic coupon) for specifying the key used into the coupon main data of an electronic coupon at the time of verification of electronic signature shall be included.
[0142] First, while acquiring the information which serves as a basis from coupon creation information based on the display contents description form notified from the coupon ID notified from the coupon server 104, and the personal digital assistant 105 Other required information, including for example, time data etc., is acquired or generated, and the portion (for example, whole of drawing 3) of the main part of an electronic coupon is created (Step S21).
[0143] And hash function calculation of - main data of the created electronic coupon is performed (Step S22).
[0144] Next, the key data according to the date is acquired from the coupon server 104 to secure one (Step S23).
[0145] Next, it is judged by being directed from the coupon server 104, for example with reference to coupon creation information whether Terminal ID is used for electronic signature (Step S24).
[0146] In using Terminal ID, the hash value and Terminal ID for which it asked are enciphered with the acquired key, and it creates electronic signature data (Step S25). On the other hand, in not using Terminal ID, the calculated hash value is enciphered with the acquired key, and it creates electronic signature data (Step S26).
[0147] And the created electronic signature is added to the main part of the created electronic coupon, and it is made to complete an electronic coupon (Step S25).
[0148] Below, the function which displays the information about the electronic coupon accumulated in the inside in the personal digital assistant is explained.
[0149] Drawing 12 is an example of signs that the distributed electronic coupon was displayed on the display screen 151 of the personal digital assistant 105. For example, the

terminal display screen description part of drawing 3 is displayed.
[0150] By the way, the personal digital assistant 105 can accumulate two or more electronic coupons simultaneously. As two or more electronic coupons, are in the same affiliated store or in the same store Or the electronic coupon of different ID which received from the same base transceiver station, Versatility may be the same electronic coupon, the same electronic coupon with which receiving time differs, etc. except the electronic coupon received from a base transceiver station which is in a different affiliated store, is in a different store, or is different, and the term of validity.
[0151] Drawing 13 is an example of a procedure which displays two or more electronic coupons on a display screen one after another in a personal digital assistant.
[0152] In addition, a personal digital assistant shall have a special exclusive button for coupon display directions here. Of course, you may perform not an exclusive button but coupon display directions by GUI, speech recognition, etc.
[0153] First, in the state of an initial screen (Step S31), if a coupon display button is pushed by the user (Step S32), the terminal display screen description part of the first electronic coupon chosen on the predetermined standard will be displayed (Step S33).
[0154] Moreover, if a coupon display button is again pushed by the user (Step S34), the terminal display screen description part of the following electronic coupon chosen on the predetermined standard will be displayed (Step S35).
[0155] Hereafter, similarly, whenever a coupon display button is pushed, the terminal display screen description part of an electronic coupon is displayed one after another (Step S34, S35).
[0156] Drawing 14 is an example of the procedure which eliminates the coupon over which the term of validity passed in the personal digital assistant at the time of a coupon display.
[0157] When [namely,] a coupon display is directed in a procedure like drawing 13 if the term of validity of the electronic coupon was checked (Step S41), it expressed as the usual method when becoming in the term of validity (Step S42), and it has passed over the term of validity -- an alarm -- ** -- and/or, it displays with the special method of presentation (Step S43).
[0158] or -- in Step S43 -- an alarm -- ** -- and/or, it displays with the special method of presentation, and after taking a user's check input, you may make it eliminate from the electronic coupon accumulation part 503
[0159] Or you may make it eliminate from the electronic coupon accumulation part 503 automatically in Step S43, without displaying.
[0160] moreover -- the electronic coupon with which the term of validity is approaching in Step S42 -- an alarm -- ** -- and/or, you may display with the special method of presentation.
[0161] Moreover, the electronic coupon over which the term of validity passed is checked periodically (automatically), and you may make it eliminate from the electronic coupon accumulation part 503.
[0162] Moreover, when an electronic coupon is carried out electronic coupon accumulation part 503 automatically, you may make it show a user the information about the eliminated electronic coupon.
[0163] Next, an example of the sequence at the time of the system side collecting electronic coupons from a personal digital assistant to drawing 15 is shown.

[0164] In addition, it explains here taking the case of the case where it is the rebate check which an electronic coupon can use at the time of merchandise purchase. Moreover, the processing procedure as a function of the original register at the time of merchandise purchase is skipped here. Of course, also when it is what transfers voluntarily the goods which have an electronic coupon in some which presented it, it is possible and in this case The procedure of collecting electronic coupons may operate without relation with the function of an original register independently (when the procedure of collecting electronic coupons operates independently, in a register, there is also a thing for which a coupon recovery button is used).
[0165] First, a visitor performs the proposal of the purport "he wants to use the coupon in this personal digital assistant" [in stores such as a supermarket and a convenience store,], the personal digital assistant 105 is passed to a salesclerk, and a salesclerk brings that personal digital assistant 105 close to the base transceiver station 102 (or it carries out placing etc.). Or while a visitor gives a salesclerk the above-mentioned proposal, the visitor himself brings the personal digital assistant 105 close to the base transceiver station 102 (or it carries out placing etc.).
[0166] You may be made to set the electronic coupon with which the terminal display screen description part is displayed on the display screen of the personal digital assistant as the object of recovery (use) here.
[0167] That is, although it thinks [that some electronic coupons may be accumulated also into the personal digital assistant, and], if it is the electronic coupon currently displayed on the display screen of the personal digital assistant, that it is the target of recovery (use) will tend to check a visitor and a salesclerk, and it will be easier to understand the contents. moreover, coupon with an another visitor is another store -- it is -- if it thinks [that it may be thought that it will use for another opportunity, and] and only the coupons currently displayed are collected (even if it is in the term of validity) Recovery striped ****** can be prevented now for the electronic coupon which a visitor does not mean. Moreover, a visitor can be made conscious of having received service by an electronic coupon, and a propaganda effect is also acquired.
[0168] In setting the electronic coupon currently displayed on the display screen of the personal digital assistant as the object of recovery (use), a visitor displays a desired electronic coupon on the display screen of a personal digital assistant, and shows it.
[0169] Next, a salesclerk pushes the coupon recovery button (refer to drawing 1) of a register 101 (S101). By pushing this coupon recovery button, recovery processing of the electronic coupon from the personal digital assistant 105 is started.
[0170] First, a register 101 will transmit the message which directs ** indicating a coupon recovery processing start to the base transceiver station 102, if a coupon recovery button is pushed (S102).
[0171] The base transceiver station 102 to which the coupon recovery processing start was directed by the above-mentioned message demands Terminal ID from the personal digital assistant 105 like the case of drawing 9 (S103). The personal digital assistant 105 which received this demand answers the base transceiver station 102 the message of the purport that it is terminal ID=x (S104).
[0172] Next, the base transceiver station 102 transmits the message which asks terminal ID=x like the case of drawing 9 about whether the personal digital assistant 105 which answered is registered as an object of electronic coupon recovery to the coupon server

104 (S105).
[0173] [the coupon server 104 which received the message of this inquiry] It is investigated [the user management information in a self-server as well as the case of drawing 9 is retrieved by using terminal ID=x as a key, and terminal ID=x is registered, and service information "makes the object of sending/recovery of an electronic coupon"] whether it is registered like (S106). When registered, the base transceiver station 102 is notified of the message of the purport that it is registered. When not registered, the message of the purport that it is not registered is notified (S107).
[0174] When the notice of the purport that it is not registered is received, the base transceiver station 102 ends processing (the end of processing is notified to other equipment if needed).
[0175] In addition, you may be the mechanism in which this electronic coupon can be used only when the visitor has got the copy of the electronic coupon and the terminal ID of the visitor's personal digital assistant is registered into the store side. Moreover, when the terminal ID of a visitor's personal digital assistant is not registered, the method of demanding subscription to a coupon member from the visitor on that spot from the system side (member registration being carried out on that spot) is also possible.
[0176] If the message of the purport that it is registered is received, the base transceiver station 102 will go into the personal digital assistant 115 at the processing for collecting electronic coupons.
[0177] First, in the base transceiver station 102, the base transceiver station 102 transmits the service search demand about the service about an electronic coupon to the personal digital assistant 105 like the case of drawing 9 (S108). The personal digital assistant 105 which received this service search demand answers the message of the purport that this service does not exist, when it does not answer and exist the message of the purport that this service exists when the service about an electronic coupon exists in a self-terminal in the base transceiver station 102 (S109).
[0178] When the message of the purport that it does not exist is received, the base transceiver station 102 ends processing (the end of processing is notified to other equipment if needed).
[0179] If the message of the purport that it exists is received, the base transceiver station 102 will transmit the message which requires recovery of a coupon to a personal digital assistant (S110).
[0180] [the personal digital assistant 105 which received the message of the coupon recovery demand] the target electronic coupon as the response -- all the data of the electronic coupon concerned -- or Data required in order to check the justification of data required at least since the electronic coupon concerned is specified, and the electronic coupon concerned (-- for example, terminal ID) of a self-terminal is transmitted to the base transceiver station 102 coupon main data, electronic signature, and if needed among the main parts of an electronic coupon (S111).
[0181] [the base transceiver station 102 which received these data] Data (the coupon main data, electronic signature, Terminal ID for example, among the main parts of an electronic coupon) required in order to check the justification of data required since the electronic coupon concerned is specified, and the electronic coupon concerned is transmitted to the coupon server 104 (S112).
[0182] In addition, when electronic signature is also setting the contents of the terminal

screen display description part of the main part of a coupon as the object as mentioned above, in order to recalculate electronic signature in a coupon server, the contents of the terminal screen display description part also need to transmit. Here, a terminal screen display description part assumes that it has separated from the object of hash function calculation.

[0183] The coupon server 104 which received these data checks justification of an electronic coupon by a predetermined method which was mentioned above. For example, electronic signature is calculated from coupon main data, and the electronic signature thought to be this is compared. And if they agree, it is checked that there is no alteration etc. and the justification of a coupon can be checked. If they do not agree, it is checked that there has been an alteration etc. and it can check that a coupon is not just.

[0184] [in addition, in the case of the electronic coupon limited to the specific personal digital assistant (for example, terminal ID=x) like drawing 10 (b)] Since terminal ID=x is contained in electronic signature, when the terminal ID of the personal digital assistant which collected these electronic coupons is not contained in electronic signature, it is also possible to resist use of that electronic coupon as what cannot check the justification of an electronic coupon.

[0185] now, [the coupon server 104] when the justification of the target electronic coupon is able to be checked as opposed to the base transceiver station 102 -- a coupon justification confirmatory response -- returning (S113) -- it is notified to a register 101 that its service is given in discount of the frame applicable to an electronic coupon (S114).

[0186] The base transceiver station 102 which received the coupon justification confirmatory response transmits the elimination demand of this electronic coupon to the personal digital assistant 105 (S115). The personal digital assistant 105 which received this eliminates an applicable coupon from various coupon accumulation parts, and eliminates it also from a display screen (S116).

[0187] Moreover, a register 101 reflects service in discount of the notified contents.

[0188] In addition, in the coupon server 104, when the notice of the purport that it is not registered when it is checked that the target electronic coupon is not just is received, a response to that effect is transmitted to the base transceiver station 102, and processing is ended (the end of processing is notified to other equipment if needed).

[0189] In addition, a sequence which is performed at the time of merchandise purchase is also possible like [processing / coupon sending] the above-mentioned example.

[0190] Moreover, a sequence which relates with the amount-of-money calculation for purchase at the time of merchandise purchase, performs coupon recovery processing, for example, and performs processing which sends the electronic coupon according to purchase goods, the amount of money for purchase, etc. further is also possible.

[0191] Although the base transceiver station has explained until now taking the case of the case where the electronic coupon data transmitted to a personal digital assistant is generated, it is also possible to generate electronic coupon data by a coupon server.

[0192] An example of the sequence at the time of sending an electronic coupon to drawing 16 to a personal digital assistant from the system side which can be set in this case is shown.

[0193] First, the procedure of S201-S209 is the same as the procedure of S1-S9 of the example of a sequence of drawing 9 .

[0194] Next, in drawing 16 , an inquiry and response of display contents description form

are performed between the base transceiver station 102 and the personal digital assistant 105. The procedure of these S210 and S211 is the same as the procedure of S12 of the example of a sequence of drawing 9 , and S13.
[0195] Next, the base transceiver station 102 transmits the message which requires the data of an electronic coupon which should be transmitted to the coupon server 104 to the personal digital assistant 105 of this terminal ID=x. This procedure of S212 corresponds to S10 of the example of a sequence of drawing 9 .
[0196] Next, the coupon server 104 is the same method as the electronic coupon data creation processing by the base transceiver station [in / on the procedure of S213, and / S14 of the example of a sequence of drawing 9] 102. The data (for example, data of three kinds of electronic coupons, coupon ID=A, B, and C) of an electronic coupon which should be transmitted to the personal digital assistant 105 of this terminal ID=x is created.
[0197] And the coupon server 104 sends the created electronic coupon to the base transceiver station 102 (S214).
[0198] The base transceiver station 102 sends the electronic coupon received from the coupon server 104 to the personal digital assistant 105 through wireless LAN, such as bluetooth, (S215).
[0199] The personal digital assistant 105 accumulates the electronic coupon received from the base transceiver station 102 through wireless LAN, such as bluetooth.
[0200] Thus, the way generate a coupon, and a coupon server relays a base transceiver station and performs the sending is also possible by giving accumulation of the coupon which transmits to a personal digital assistant, and the function of generation to the coupon server side, and notifying ID and the display style of a personal digital assistant from a base transceiver station.
[0201] Below, the various variations of this embodiment are explained.
[0202] All or a part of the register 101, base transceiver station 102, and coupon server 104 may be united. For example, the register 101 and the base transceiver station 102 may be united. Moreover, for example, the register 101 and the coupon server 104 may be united.
[0203] The equipment of the shape of a card which has a communication function is sufficient as a personal digital assistant, for example.
[0204] The composition which excluded the display function from the personal digital assistant is also possible.
[0205] The composition which excluded the scrambling function from the base transceiver station or the coupon server is also possible.
[0206] Composition which starts sending/recovery of a coupon automatically is also possible by pushing coupon sending / recovery button by recognizing automatically that the personal digital assistant entered by the base transceiver station side about both coupon sending / recovery rather than starting processing. [both / one side or] There are various methods, such as the method of judgment of the sending in the case of starting coupon sending / recovery automatically or recovery judging to be recovery, while POS is working for example, by the method and register which are depended on a notice from a personal digital assistant, and judging to be sending while POS is not working by a register.
[0207] In addition, each above function is realizable also as software.
[0208] Moreover, this embodiment is in order to make a computer perform a

predetermined means (or for operating a computer as a predetermined means). Or it can also carry out also as a recording medium which recorded the program for realizing a predetermined function on the computer and in which computer reading is possible.
[0209] This invention is not limited to the form of operation mentioned above, in the technical range, can change variously and can be carried out.
[0210]
[Effect of the Invention] According to this invention, transmission and reception of an electronic coupon are attained between the radio personal digital assistants by the side of a near system and users, such as an entrepreneur, without through a communication provider.

[Translation done.]